

## Supporting Information

### Figure S1

Oscilloscope traces for CV output from the power supply with the previous (left panels) and present (right panels) systems, measured over the periods of 60 s (top row) and 2 s with proportionately finer time resolution (bottom row).

### Figure S2

Consecutive sequences of spectral windows (90 s each) for reserpine 1+, measured using He/N<sub>2</sub> with 46.5% He and  $Q = 0.57$  L/min. The mean peak widths for runs (1 - 3) are, respectively,  $0.786 \pm 0.025$ ,  $0.795 \pm 0.033$ , and  $0.772 \pm 0.036$  V/cm.

### Figure S3

Measurements for Syntide 2 (3+ ion) using He/N<sub>2</sub> with 48% He and  $Q = 0.73$  L/min: (a) full spectrum, (b) window around the peak II, (c) consecutive sequences of spectral windows (75 - 90 s each). The  $\langle w \rangle$  values for runs (1 - 4) are, respectively,  $0.556 \pm 0.029$ ,  $0.535 \pm 0.043$ ,  $0.533 \pm 0.038$ , and  $0.523 \pm 0.043$  V/cm.

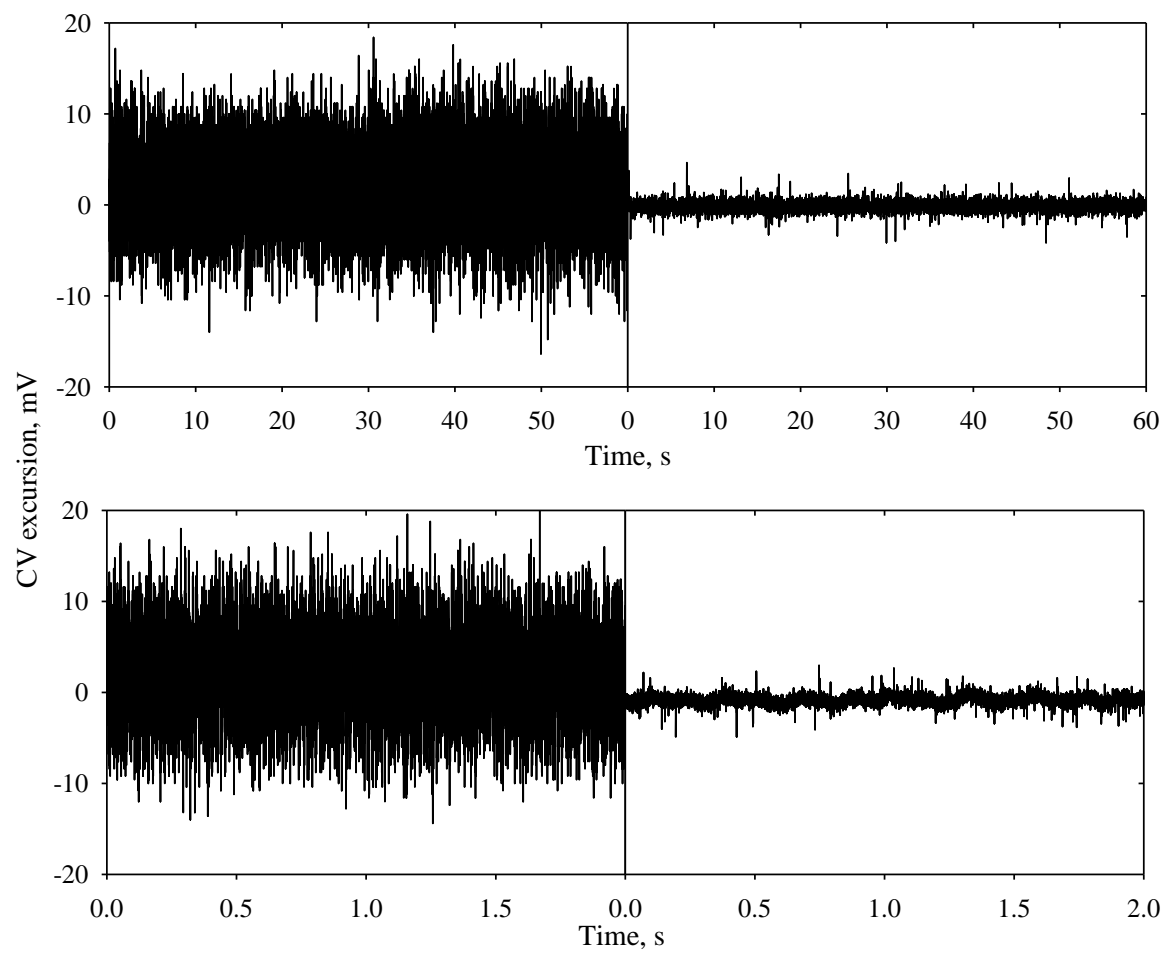
### Figure S4

Consecutive sequences of spectral windows (90 s each) for Syntide 2 (3+ ion), measured using H<sub>2</sub>/N<sub>2</sub> with 50% H<sub>2</sub> and  $Q = 0.76$  L/min. The  $\langle w \rangle$  values for runs (1, 2) are, respectively,  $0.520 \pm 0.039$  and  $0.519 \pm 0.040$  V/cm.

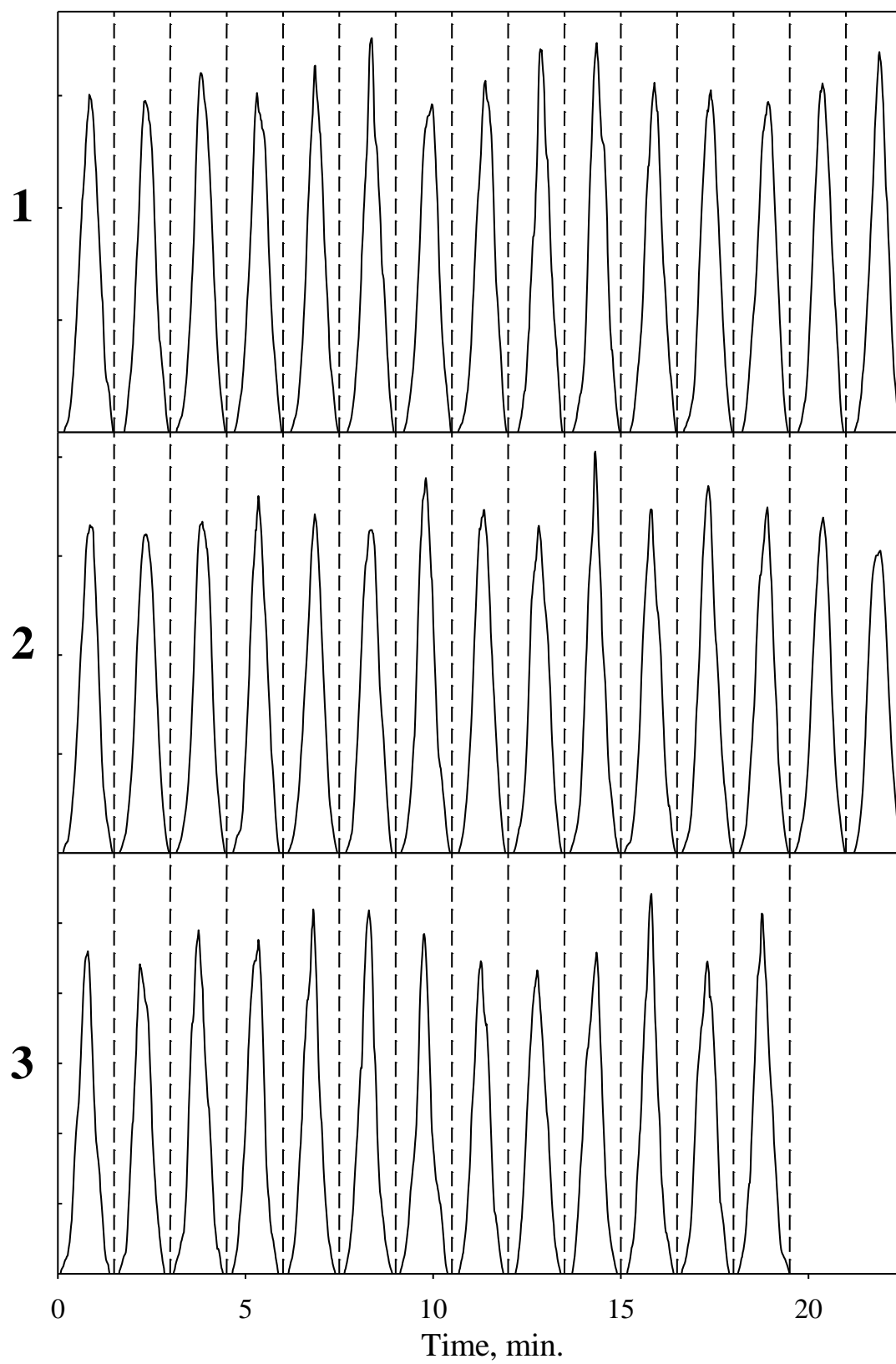
### Figure S5

Consecutive sequences of spectral windows (75 - 90 s each) for Syntide 2 (3+ ion), measured using H<sub>2</sub>/N<sub>2</sub> with 86% H<sub>2</sub> and  $Q = 2$  L/min. The  $\langle w \rangle$  values for runs (1, 2) are, respectively,  $0.769 \pm 0.053$  and  $0.758 \pm 0.088$  V/cm.

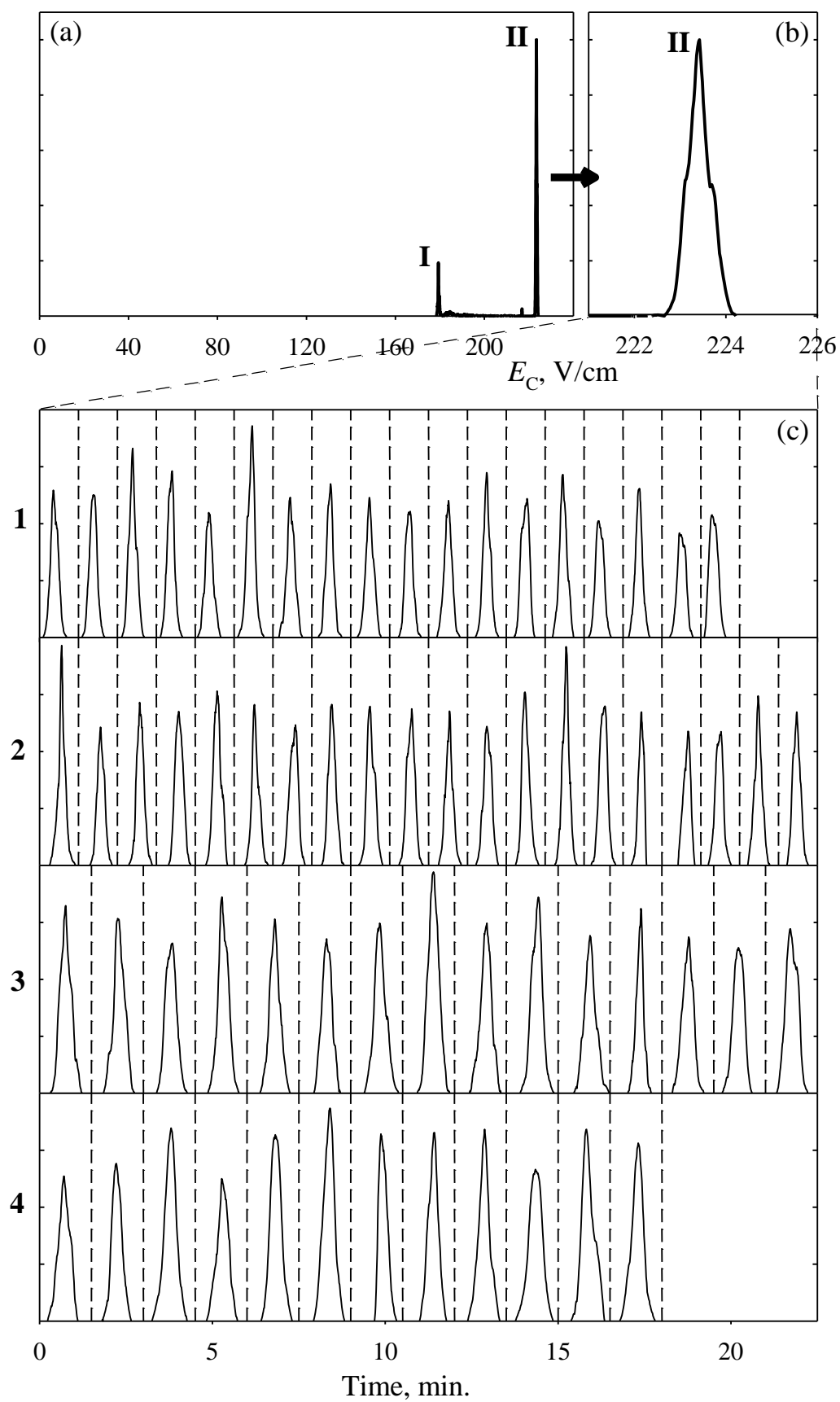
**Fig. S1**



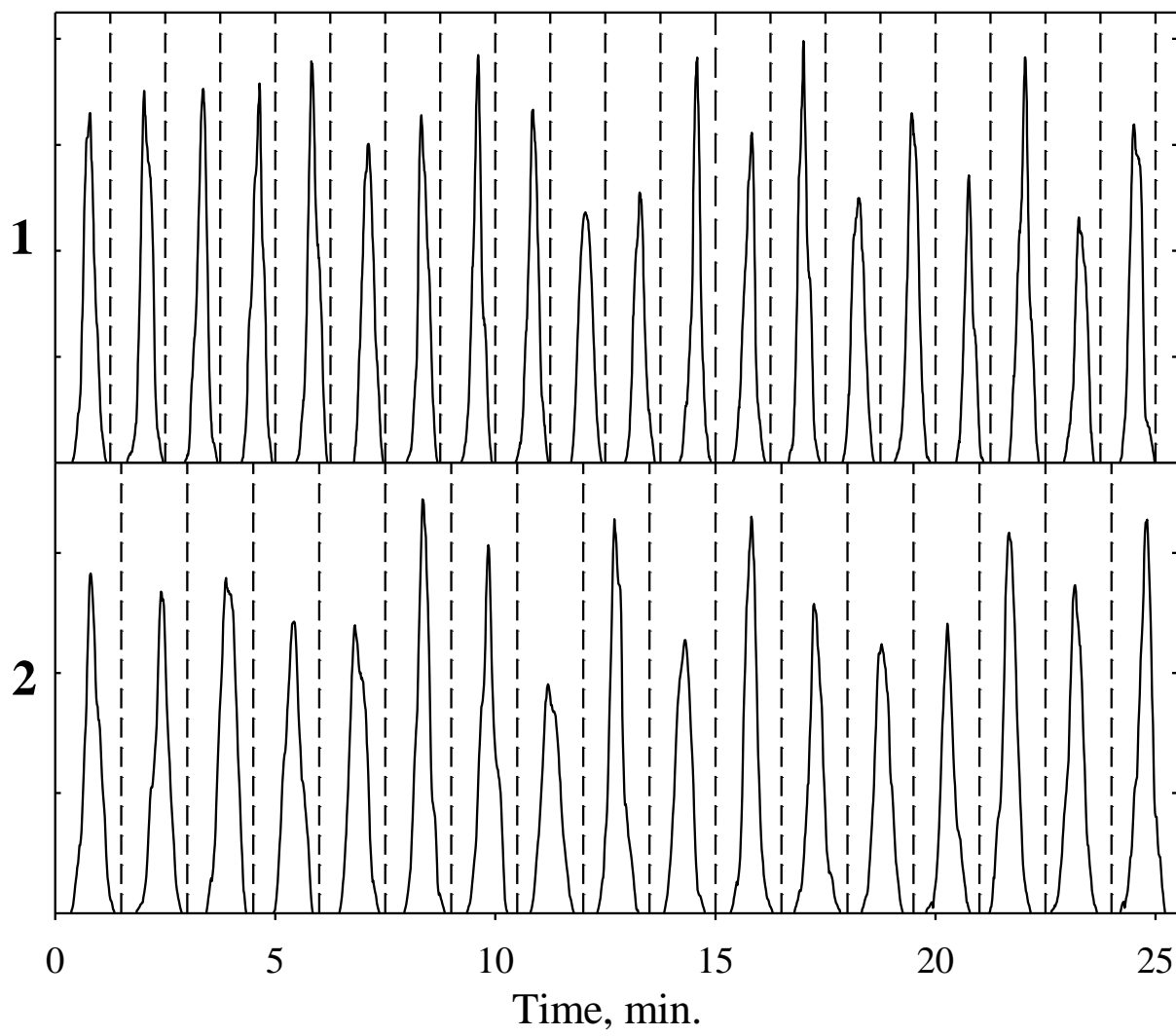
**Fig. S2**



**Fig. S3**



**Fig. S4**



**Fig. S5**

